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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/702,415  
Filing Date: November 06, 2003  
Appellant(s): LUDWIG, LESTER F.

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Jeffrey J. Lotspeich  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 08/08/2008 appealing from the Office action mailed 05/12/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

09/812,400 – continuation

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,848,164	LEVINE	12-1998
5,652,797	OKAMURA ET AL.	7-1997
5,555,306	GERZON	9-1996

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 7-9, 11-27, 29, 32-34, and 36-50, are rejected under 35 U.S.C. 103(a) as being unpatentable over Levine (5,848,164) in view of Okamura et al. (5,652,797).

Levine discloses a system for enriching timbre of audio signals by adding swelling resonance, twang, or both, said system comprising: an incoming audio signal (input – figure 5); and a plurality of audio signal delays (401, (501-1) – (501-3)), wherein each delay of said plurality of audio signal delays receive signal inputs comprising said incoming audio signal and a distinct high resonance positive feedback signal (via Gain 402), and includes a distinct selectable delay time corresponding to a

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period of a desired resonant frequency, wherein each delay of said plurality of audio signal delays combine said received signal inputs resulting in a combined signal (column 4, lines 13-30).

Levine discloses the system, wherein each outgoing signal generated by each delay of said plurality of audio signal delays is mixed by a mixer to produce at least one outgoing mixed audio signal (figure 5).

Levine discloses the system, wherein each outgoing signal generated by each delay of said plurality of audio signal delays is processed by a dedicated signal processor (114) resulting in a corresponding plurality of processed signals, wherein said plurality of processed signals are mixed by a mixer to produce at least one outgoing mixed audio signal (figures 2 and 5).

Levine discloses the system, wherein said dedicated signal processor comprises a flanger (701) swept at a rate corresponding to a sub-audio frequency. 8

Levine discloses the system, wherein said dedicated signal processor comprises a chorus (702) swept at a rate corresponding to a sub-audio frequency.

Levine discloses the system, wherein said system provides one signal processing layer of a multi-layered signal processing system (figure 2).

Levine discloses the system, wherein said selectable delay time for at least one delay of said plurality of audio signal delays is controlled by an incoming delay control signal; wherein said high resonance positive feedback signal of at least one delay of said plurality of audio signal delays is controlled by an incoming feedback control signal; and where mixer is controlled by an incoming mixer control signal (figures 3 and 4).

Levine discloses the system, wherein said dedicated signal processor for at least one delay of said plurality of delays is controlled by an incoming signal processor control signal.; wherein at least one of said plurality of delays is controlled in real-time by a measured attribute of said incoming audio signal; wherein said high resonance positive feedback signal of at least one delay of said plurality of audio signal delays is controlled in real-time by a measured attribute of said incoming audio signal (Figure 8).

Levine discloses the system, wherein at least one of said plurality of audio signal delays is controlled according to stored program control (810); wherein said mixer is controlled according to stored program control (810); wherein said dedicated signal processor for at least one delay of said plurality of delays is controlled according to stored program control (810).

Levine does not disclose providing distortion.

However, Okamura et al. disclose an audio input signal, wherein distortion is introduced into a combined signal, and wherein each delay of said plurality of audio signal delays generates an outgoing signal according to said selectable delay time, and wherein said outgoing signal comprises said combined signal and any distortion that has been introduced (figure 24; and column 22, lines 29-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Okamura et al., because the teachings allow more of a range of varying the sound by allowing distortion to be added to the mixed sound signal.

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3. Claims 3, 5, 6, 10, 28,30-31, and 35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Levine in view Okamura et al. as applied to claims 1, 2, 4, 7-9, 11-27, 29, 32-34, and 36-50 above, and further in view of Gerzon (5,555,306).

Levine and Okamura et al. are discussed above. Neither reference discloses panning or spatial location of the sound.

However, Gerzon discloses an input signal received by a plurality of delays, wherein a mixer separately provides low- speed auto-panning location modulation to each outgoing signal generated by each delay of said plurality of audio signal delays, wherein the dedicated signal processor further includes an auto-panner swept at a rate corresponding to a sub-audio frequency (see claims 15 and 34 of Gerzon).

Gerzon discloses the system, wherein said system is incorporated into a spatially-distributed timbral realization system (abstract; and column 24, lines 28-39 and lines 54-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Gerzon with Levine, because the teachings allow localization of the output sound, thereby creating a desired sound of the listener.

#### **(10) Response to Argument**

Applicant's arguments filed 08/28/2008 have been fully considered but they are not persuasive.

A.1 The applicant argues that the examiner fails to address Appellant's arguments. However, the examiner disagrees. The examiner points out the element in

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which the applicant believes to be patentable over the prior art. The rejection in the office action addresses all of elements including that which applicant believes to be different from the prior art. It is not necessary to repeat the rejection in the argument response, when the elements are clearly pointed out in the rejection. The distinct selectable delay equates to delay line length which is customizable and adjustable as pointed out in the office action (column 4, lines 13-30)

A.2 The applicant argues that the reference is deficient. However, the examiner disagrees. The claim discussed, is broad and is interpreted in such a manner. Each element is pointed out in the references and the analogous art is combinable.

A.3 The applicant argues that Levine does not teach a plurality of audio signal delays. The examiner disagrees with this statement. The applicant points out that the incoming audio signal is fed to an analysis filter bank, which splits the signal into subbands. The applicant acknowledges the delays, but states that the delays do not receive the audio signal. Clearly, the audio signal is still an audio signal after going through the analysis filter bank. Each of the delays receives an audio signal. The applicant argues that the claim recites the same incoming audio signal. However, this is the same audio signal only after being processed through the analysis filter bank. Furthermore, the office action relies on figure 5, to provide the incoming input which is an audio input, which is input into the delay. The applicant further argues that the element (402) can not be used with delays (501-1 through 501-3). The examiner referred to figure 5 to show the use of multiple delays receiving. Figure 4 shows the use of a feedback gain, as opposed to the feed-forward gains of figure 5. Inherently



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multiple structures of figure 4 could replace the structure of figure 5. Figures 4 and 5 represent customizable subbands. Therefore, it is clear that multiple flange effect circuits (figure 4) could be used in multiple subbands (figure 7) to provide multiple delays. Further, figure 5 shows that multiple delays can be used in one subband or effect circuit. Either way, there is nothing new and inventive in applicant's claim 1. These limitations are met by the single reference (Levine).

A.4 The applicant argues that Levine does not disclose a selectable time delay. The applicant admits that Levine discloses the ability of the designer to adjust the delay length (401). The applicant then states that Levine does not disclose a "distinct selectable delay time" corresponding to a desired resonant frequency. The examiner disagrees. Clearly an adjustable delay can equate to a selectable delay. Furthermore, the term "resonant frequency" refers to the enhancement or intensification of sound. The purpose of the flange subband and the other variety of selectable subbands is to enhance or intensify the sound frequency. The applicant admits that Levine provides moderate levels of resonant feedback. This indeed implies that the selectable or adjustable delay corresponds to a desired resonant frequency, which is fed back to the selectable delay via element (402) (figure 4).

A.5 Applicant argues the inclusion of a distinct selectable delay time. The examiner believes that this limitation is met by the adjustable or selectable delay discussed above (A.4). The term "distinct" is met by the use of the delay for various effects or sound enhancements.

A.6 The applicant argues the distortion of Okamura. The examiner disagrees with the applicant's analysis of this feature and believes that the feature is clearly met by the reference. The applicant assumes *arguendo* that the feature exists in the reference, but disagrees that the distortion is introduced after a threshold is met. Further, it is inherent that the flow of the combined signal will have a threshold that would introduce distortion as the combined signal weakens. There is nothing new about the feature, which is met by the teachings of the reference. Distortion is defined as the change of an audio or video signal that changes from the original waveform signal. The application of the distortion "DIST + EQ" to the combined signal, changes the waveform signal, wherein threshold would be the point that the combined signal changes based on the added effect (column 22, lines 29-34).

A.7 The applicant states the examiner fails to comply with MPEP 707, which provides explaining a complex reference or a reference that is different from the applicant's claimed invention. The reference is no more complex or different than the applicant's claimed invention.

A.8 The applicant concludes with a summary that claim 1 is similar to claim 26. The examiner agrees to the similarity and believes that both claims are met by the prior art.

B. The dependent claims are met by the applied prior art, as well.

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Marlon T Fletcher/

Primary Examiner, Art Unit 2837

Conferees

:/Walter Benson/  
Supervisory Patent Examiner, Art Unit 2837

**Drew A. Dunn**  
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TQAS, TC 2800